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Report Abstract

North Korea presents a unique problem for America in a number of ways. The regime is extremely hostile to the Untied States and has ignored the obligations signed onto in a number of international treaties. It also maintains stockpiles of chemical and biological weapons and claims to be in possession of several nuclear devices. Thus far, the six-party talks have failed to yield a breakthrough in the resolution of this issue and are currently stalled because of a US freeze on North Korean assets at the Bank of Macau.

Presently, it would be unacceptable to let the destiny of Japan and South Korea rest in the faith of Kim Jong Il's good intentions. Because of the regime's erratic and aggressive nature it is imperative that the United States be able to respond with a credible military threat should action be taken that threatens American, Japanese, or South Korean lives. This report looks at general policy solutions and countermeasures that the US should try and take in conjunction with Japan and South Korea to protect against North Korean aggression. It includes two types of measures, some designed to reduce the severity of an attack and others the inclination for North Korea to mount one.

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Table of Contents

Executive Summary	iii
Acknowledgments	vii
Acronyms	viii
Introduction of Problem, Document Roadmap and Methodology	1
Brief Overview of the North Korean Weapons Program	4
Country Interests Analysis Points	8
United States	8
Japan	9
China	10
South Korea	12
Russia	13
North Korea	13
Problematic Responses from North Korea	16
Attack Japan	16
Attack South Korea	18
Attack US Forces in Japan or South Korea	21
Attack US Mainland	22
Proliferation Activities	24
Miscellaneous Attacks	25
Possible Countermeasures to Responses from North Korea	27
Change Strategic Situation for North Korea	27
Moderate Military Threat of North Korea	31
Recommendations	39
To be Implemented Immediately	40
To be Implemented when Necessary	43
Conclusion	45
Bibliography	50
Appendices	
History of North Korean Nuclear Program	A-1
North Korean Missile Capability and Inventory	B-1
Ballistic Missile Range Objectives from North Korea	C-1

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Executive Summary

North Korea presents a unique problem for America in a number of ways. The regime is extremely hostile to the Untied States and has ignored the obligations signed onto in a number of international treaties. It also maintains stockpiles of chemical and biological weapons and claims to be in possession of several nuclear devices. Thus far, the six-party talks have failed to yield a breakthrough in the resolution of this issue and are currently stalled because of a US freeze on North Korean assets at the Bank of Macau for counterfeiting activities. They do, however, represent the best chance for a satisfactory resolution of this conflict.

Yet, with the danger that North Korea poses, it would be unacceptable to let the destiny of Japanese and South Korean citizens rest solely in the faith of Kim Jong Il's good will. Because of the regime's erratic and aggressive nature it is imperative that the United States possess a credible military option should North Korea take action that threatens American, Japanese, or South Korean lives. *Thus, the United States has the difficult task of building a credible military option against North Korea while preserving and if possible advancing the viability of a diplomatic solution.*

1. WMD Capability and History of Engagement

The North Koreans have been working for decades to produce an indigenous WMD capability. It is very likely that they possess nuclear weapons, but has not been confirmed. They have access to a great deal on nuclear material, both uranium and some plutonium. Though reports differ, it is expected that North Korea has enough material for at least one weapon, most likely three or more. The North Koreans have signed on in the past to a number of international agreements, including the 1994 Agreed Framework and the NPT, the latter they withdrew from in 2003. While, most of the present conflict has been focused on their nuclear weapons, they also possess a range of WMD programs. Their chemical weapons industry appears to be a mature industry that can indigenously produce most types of chemical weapons and they are believed to maintain a large stockpile. Their biotechnology industry is rudimentary, but is capable of producing and weaponizing many basic strains of infectious diseases. Their munitions manufacturing capability allows them to produce several delivery systems for these two types of WMD, allowing delivery from a number of different military systems

2. Country Interests Involved

An understanding of the strategic interests for countries involved helps for understanding the current stances of the countries. Later when diplomatic policy measures are developed, they will take into consideration these interests, hoping to change the strategic situation for North Korea in order to achieve cooperation.

United States - 1) Keep nuclear weapon Proliferation to a minimum 2) Protect Japan and South Korea 3) Protect and promote commercial interests in Asia 4) Maintain national presence in East Asia

Japan – 1) Protection of Japanese territory 2) Protect and promote commercial interests 3) State of US-Japanese Alliance 4) Self-sufficiency in defensive abilities 5) Abduction of Japanese citizens by North Korea

South Korea – 1) Ensure country is safe from NK 2) Protect and promote commercial interests 3) Promote economic modernization of NK for eventual reunification

China – 1) Ensure continuation of economic modernization and social stability 2) Ensure Stability of North Korean Regime 3) Keep US troops away from border 4) Stop flow of refugees from North Korea to northern China 5) Develop and modernize North Korea 6) Keep Japan from rearming/developing nuclear weapon capability

Russia – 1) Keep nuclear weapon Proliferation to a minimum 2) Support China's policy to gain support for own issues

North Korea – North Korea's interests are hardest to postulate because of the closed nature of their regime. This represents what seems to be the most probable. 1) Ensure the United States does not invade 2) Develop domestic energy supply infrastructure 3) Development of Missiles 4) Development of WMD program/ willingness to trade for incentives 5) Reunification of Korea (under Kim Jong Il?)

3. Problematic Actions from North Korea

North Korea has gone to lengths to develop a variety of methods for attacking its enemies in addition to its nuclear weapons program. Each country and scenario faces different dangers from North Korea and should be considered separately. For the present, however, North Korea's nuclear program does not seem to present much of a threat, if only due to technological shortcomings by the North Koreans.

Attack Japan – Japan's greatest vulnerability is to North Korea's missiles. The No'dong and Taep'o dong missiles, together thought to number over 200, have the range to strike Japan. They can likely be armed with chemical and biological warheads in addition to conventional warheads. Japan may also be vulnerable to asymmetric warfare threats.

Attack South Korea – South Korea is opposed by the greatest threat from North Korea. With artillery poised to attack Seoul and the world's fourth largest standing army, North Korea can inflict massive damage if they wish. They also have about 600 scud type missiles that can strike within South Korea. Lastly, they are extremely vulnerable to several types of asymmetric warfare threats, most prominently North Korean's special operations forces.

Attack US Forces Stationed Locally – If North Korea does not want to expand a war to include Japan and South Korea, they may still consider US troops a legitimate target. The mostly likely form of attack would be from missiles and forms of asymmetric warfare.

Attack the US mainland – Except for asymmetric warfare threats, such as sponsoring terrorism and special operations units, it is unlikely that North Korea has the capacity to directly engage the United States.

Proliferation Threats – North Korea's ability to manufacture WMD poses a challenge. By selling weapons or components such as Highly Enriched Uranium to different countries or terrorist groups, North Korea can place the US and our allies at potentially grave risk.

4. Possible Measures and Recommendations

There are several measures that the United States can implement to counter the North Korean threat. One type of measure deals with changing North Korea's strategic situation to induce cooperation or a non-responsive attitude towards a limited US military strike. The other type of measure moderates the military threats that North Korea poses to the US and our allies.

Some of these measures can be implemented immediately, but others may degrade the viability of a negotiated settlement. These actions cannot be taken, or if pre-positioned ahead of time, announced until the time a strike becomes necessary or a North Korean preemptive strike is believed imminent.

Options to be Implemented Immediately

- Announcement of Bright Line Triggers
- Stationing a nuclear deterrent
- Evacuation planning, readiness drills and public education campaigns
- Build chemical and biological detector network for key locations
- Build small stockpile of medical treatment supplies
- Pre-positioning and advertisement of military capabilities
- Cargo screening systems upgrades
- Start developing PsyOps Campaigns
- Conducting joint training exercises

- Set up joint surveillance and intelligence sharing structures
- Deploying defensive systems (PAC-3 missiles and radar-tracking artillery)
- Develop internet access denial capability

Options to be Implemented when Necessary

- Implementation of a gradualist approach to attacking North Korea
- Announcement of American singular involvement
- If possible announce alternative to US actions and incentives
- Announcement of American nuclear deterrent
- Hire more temporary workers for security at border crossings
- Incentives deals to Russia and China
- Commence PsyOps Campaigns if not already in operation (Self-explanatory)
- Advertisement of military capabilities including defensive weaponry if not done already (Self-explanatory)

These measures taken together represent a compromise between arming Japan and South Korea with the best defense possible and still allowing for a negotiated settlement. There are probably more measures that can be implemented to help along similar lines, but these represent a good start for securing the defense of the United States and our allies in the present situation.

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Acronyms

AAA	<u><i>Anti-Aircraft Artillery</i></u> – guns designed to attack flying aircraft.
APC	<u><i>Armored Personnel Carriers</i></u> – an armored transport vehicle designed to block small weapons fire from infantry carried within.
DMZ	<u><i>Demilitarized Zone</i></u> – a highly fortified zone that separates North and South Korea, marking the current border between them.
HE	<u><i>High Explosive</i></u> – conventional warheads used in bombs and missiles.
HEU	<u><i>Highly Enriched Uranium</i></u> – uranium that is enriched to about 80% or greater U-235. This is a fissile material and can be used to create nuclear weapons.
IAEA	<u><i>International Atomic Energy Agency</i></u> – an international oversight group designated the task to inspect and report on countries' nuclear activities.
MiG	<u><i>Mikoyan-Gurevich</i></u> – a Russian aircraft manufacturer. MiG-X is often used to refer to any number of aircraft designed by this company.
NPT	<u><i>Treaty on the Non-Proliferation of Nuclear Weapons</i></u> – an international treaty that limited countries' abilities to produce nuclear weapons.
PAC-3	<u><i>Patriot Advanced Capability-3</i></u> – the latest upgrade version of the Patriot missile system. It is designed to be more effective against ballistic missiles.
PsyOps	<u><i>Psychological Operations</i></u> – a means of warfare that targets an adversary's morale or influences them to undertake certain actions.
SAM	<u><i>Surface-to-Air Missile</i></u> – a missile with a guidance system designed to intercept and destroy airplanes. Examples include the Stinger and Patriot missile systems.
SSBN	<u><i>Submarine Strategic Ballistic Nuclear</i></u> – a submarine with vertical launch tubes armed with nuclear missiles. A part of America's strategic deterrent.
TCOG	<u><i>Trilateral Coordination and Oversight Group</i></u> – a group formed in 1993 to help coordinate the policy objectives of Japan, South Korea, and the United States concerning North Korea.
TD-1	<u><i>Taep'o Dong-1</i></u> – a missile designed and produced in North Korea. One was fired over Japan in 1998.
WMD	<u><i>Weapons of Mass Destruction</i></u> – refers to weapons using chemical, biological, or nuclear (excluding radiological) means to inflict massive numbers of casualties.

The Problem with North Korea

North Korea presents a unique problem for America in a number of ways. The regime is extremely hostile to the Untied States and has ignored the obligations signed onto in a number of international treaties. It also maintains stockpiles of chemical and biological weapons and claims to be in possession of several nuclear devices. Thus far, the six-party talks have failed to yield a breakthrough in the resolution of this issue and are currently stalled because of a US freeze on North Korean assets at the Bank of Macau. It is dearly hoped that continued negotiations can yield a breakthrough, as they represent the best hope for a suitable resolution, but security cannot be premised on these being successful.

With the danger that North Korea poses, it would be unacceptable to let the destiny of Japanese and South Korean citizens rest solely in the faith of Kim Jong Il's goodwill. Because of the regime's erratic and aggressive nature it is imperative that the United States be able to respond with a credible military threat should action be taken that threatens American, Japanese, or South Korean lives. Thus, the United States has the difficult task of building a credible military threat against North Korea while preserving and if possible advancing the viability of a diplomatic solution.

Document Roadmap

This document was structured to assist a casual reader unfamiliar with the situation in North Korea or defense policy in general to gain an understanding of the basic issues involved in this conflict before moving on to a more in-depth analysis of the specifics of this problem. The document follows with possible policy measures that can be taken to address the problem and then recommendations on implementation.

To help introduce this topic the section '*Brief History of North Korea's Weapons Program*' deals with what **WMD** (*Weapons of Mass Destruction*) capabilities the North Koreans are currently thought to possess and a brief history of diplomatic engagement. The next section, '*Country Interests Analysis Points*,' pinpoints the national interests of the major actors involved, helping readers unfamiliar with this region to understand countries' current stands on the issue. The section '*Problematic responses from North Korea*' examines possible methods North Korea has available

to attack the United States and our allies, their capabilities, and particular features of the methods that may make them more or less attractive to North Korea. ‘*Possible Countermeasures to Responses from North Korea*’ looks at a range of measures available to the United States to counter these previous threats. The measures suggested all take into account the countries strategic interests explored before. The first subsection is organized by specific measures addressing the state interests of North Korea and the key players to achieve North Korean cooperation. The measures are also designed to moderate the political consequences associated with a military strike if one becomes necessary. The second subsection is organized by threats and looks at measures that address these specific threats. The final ‘*Recommendations*’ section discusses when and how to implement selected measures and specific problems that may be encountered in doing so. This will together analyze the roots and specifics of the problem, look at various measures the United States can implement, and then recommend how and when to implement these various measures.

Methodology

This paper required a great deal of research to put together. There was no scholarly work done specifically on this topic that I could find, but a great number of analyses on related topics informed my analysis and are referenced throughout. A great deal of information came from online sources, especially from the analysts at *Federation of American Scientists* and *Global Security Organization*. In addition, due to the highly fluid nature that surrounds this topic, a great deal of information had to come from newspaper sources. All information taken from online and print newspaper sources was double-checked and not included unless at least two sources confirmed the same facts. In a burst of luck, several scholarly resources became available to me late in the creation of the PAE. The report issued by the *Monterey Institute of International Studies* on North Korea’s missile and weapons capabilities was particularly useful. My interaction with Professor Carter and other PAC Seminar also informed a great deal of the project. Professor Carter’s guidance and expertise in the area of East Asia helped clarify and define the country interests analysis I performed.

The largest potential bias in my research will come from my analysis of North Korea itself. Because the regime is so closed, any analysis of their actions is bound to be uninformed by credible information obtained through direct observation inside their country. With this limitation, effort

was taken to examine their actions and their stated intentions, giving both and explaining what seems to be the most likely motivation.

Brief Overview of the North Korean Weapons Program

The best place to begin analyzing this problem is to first examine how it developed. The North Koreans have been working for decades to produce an indigenous WMD capability, not just a nuclear capability. To date they have produced chemical and biological weapons with certainty. It is very likely that they also possess nuclear weapons, but has not yet been confirmed. This section looks at the WMD manufacturing capabilities the North Korea seems to possess and the probable size of their inventory. It also quickly recounts the history of diplomatic engagement with North Korea.

Nuclear Program

The North Koreans have access to a great deal of exploitable nuclear material. North Korea has within its territorial boundaries an estimated four million tons of exploitable, high-grade uranium ore and maintains at least one mine dedicated to extraction.¹ ^A Information about the quantitative production capabilities of their mines remains lacking, but qualitatively, scientists estimate that they produce ore with 0.8% extractable uranium. The North Koreans are believed to be constructing or have finished a Uranium enrichment plant as well, allowing them to produce HEU (*Highly Enriched Uranium*).² Little more is known about their HEU program.

The North Koreans also have the capacity to extract plutonium from spent fuel rods, another fissile material. The **IAEA** (*International Atomic Energy Agency*), based upon examination of the nuclear waste, reports that about twenty-four kilograms of plutonium was separated. The estimates of the amount of usable material extracted from this, however, range from between seven to twenty-four kg, though all of these estimates credit the extraction of enough material to produce at least one nuclear device.³ Based on the US estimate of a 20,000 kiloton warhead requiring four kilograms of material, this could be enough to construct five to six nuclear weapons or only one.^B The US official estimate is approximately twelve kilograms, giving them enough to produce two or three

^A The four million tons figure cited here may be conservative with other sources believing the correct figure to be around twenty-eight million tons.

^B Dept of Energy estimates at the time concluded that eight kilograms would be needed to construct a usable weapon which was later updated to the figure of four kilograms used above. This explains why at the time the US felt there were fewer that could possibly be constructed. Some modern physicists believe that with certain boosting techniques, it may be possible to use as little as one kg to create a warhead.

weapons.⁴ This estimate does not include any plutonium that was separated following North Korea's April 2005 announcement that they would restart reprocessing.

The dialogue between North and South Korea plays an important role in the diplomatic history. In 1988, based on the initiative of South Korean President, Roh Tae-woo, efforts were taken to encourage North-South dialogue. Prime Ministerial level talks starting in 1990 led to eight separate meetings and two agreements being concluded: the Agreement on Reconciliation, Nonaggression, Exchanges, and Cooperation and the Declaration on the Denuclearization of the Korean Peninsula. The declaration specifically stated that both North Korea and South Korea "shall not test, manufacture, produce, receive, possess, store, deploy or use nuclear weapons," and that they "shall not possess nuclear reprocessing and uranium enrichment facilities."⁵

Suspicion was soon cast on North Korea's intentions. They refused IAEA inspectors access to two unreported facilities that were suspected of holding nuclear waste. The North Koreans then extended the ban to all nuclear facilities and began reprocessing uranium fuel rods to create plutonium. Further complications led to more problems in implementation of the accords and in March 1993 North Korea announced that they were withdrawing from the IAEA. The **NPT** (*Treaty on the Non-Proliferation of Nuclear Weapons*) still technically applied, but the United Nations considered North Korea's actions to constitute a withdrawal from the treaty.^{c 6} These actions served to heighten tensions on the Korean peninsula and with the United States.

Many entities became involved in the diplomatic process. The Security Council responded by passing Resolution 825, calling upon North Korea to reconsider the announcement to withdraw from the NPT and honor its obligations to allow IAEA inspections of its nuclear facilities.⁷ The US became involved and held two dialogues with the North Korean government, one in June and another in July. These laid the basic framework for continuing dialogue on the issues, but further negotiations resulted in deadlock.

In spring 1994, North Korea unloaded a quantity of fuel from its experimental five Megawatt reactor. The United States pushed for UN sanctions in return, resulting in a dramatic increase in tensions on the peninsula. A visit by former President Carter was able to curb the tensions and talks resumed in July only to be cut short by the death of Kim Il Sung, then President of North Korea. Talks were eventually resumed and resulted in the Agreed Framework, signed into effect on 12 October 1994.

^c They did, however, withdraw from the NPT in 2003 calling upon clause X of the document to do so.

In September 2002 North Korean officials acknowledged the existence of a program to produce HEU, but later denied the claim.^D In December of that year they expelled IAEA inspectors from their country. January 2003 brought North Korea's declaration that they would withdraw from the NPT and by the midpoint of 2003 they had reprocessed nuclear fuel rods to extract usable plutonium and were going to proceed to develop a nuclear deterrent.⁸ This marked the abrogation of several of the international treaties onto which North Korea signed.

Since August 2003, North Korea has been participating in Six-party talks with the United States, China, Japan, South Korea, and Russia. In the forth round of talks which started on 26 July 2005 and concluded 19 September 2005, the members agreed on a joint statement which was released. The next day, however, North Korea said it refused to abide by the agreement until the United States provided it a Light Water Reactor, a more proliferation resistant form of nuclear reactor. The fifth round of talks began on 9 November 2005.⁹ This last round of talks fell apart and North Korea is boycotting the new round of negotiations because of a US freeze of North Korean assets due to suspected counterfeiting activity.^E

Biological Program

The North Koreans seem to possess a limited biological weapons program. North Korea has been pursuing the development of biological warfare agents since the 1960s. Though their biotechnology infrastructure is underdeveloped, they appear to have the capability to produce both viral and bacteriological strains of biological weapons and achieve weaponization.¹⁰ Studies indicate the North Koreans probably have production capabilities for anthrax, cholera, yellow fever, plague and possibly others. The difficulty of controlling biological weapons, once released, makes their use potentially less desirable to the North Koreans. In addition, their limited medical infrastructure could lead them to be more deadly to themselves than to others. The North Koreans acceded to the Biological Weapons Convention in 1987, but are still believed to be producing them.¹¹

^D This is the perspective taken by the United States Department of State. Several sources dispute this fact saying that their statement was not in fact an acknowledgment, but a challenge to the US that it could not violate its international rights to produce HEU if it wanted to start. Regardless, intelligence reports seem to demonstrate that the North Koreans do have an HEU program, whether or not they have acknowledged it.

^E There is more information relating to the history of their program in Appendix A. Contained therein is a short section on the stipulations of the Agreed Framework.

Chemical Program

The North Korean chemical weapons program seems to be mature. Since 1989 they have had the ability to indigenously produce nerve, blister, choking, and blood agents.¹² They possess at least eight industrial facilities capable of producing chemical weapons and have several more facilities involved in the storage for them. United States intelligence estimates North Korean's reserves to be at least 250 tons, with some other estimates running as high as 5,000 tons. North Korea has never signed onto the Chemical Weapons Convention.¹³

Now, with a basic understanding of North Korea's preparations for warfare utilizing nuclear, biological, and chemical means it becomes necessary to understand the motivations of all the actors involved. Understanding the strategic situation will be helpful in the analysis, demonstrating why certain threats pose more of a concern to the United States than others. The next section is therefore devoted to this analysis.

Country Interests Analysis Points

This section synopsizes what seem to be the major actors' primary interests in solving this matter. This will help give readers unfamiliar with the East Asian region a background for understanding the current stances of the countries. Later when diplomatic policy measures are developed, they will take into consideration these interests hoping to change the strategic situation for North Korea in order to achieve cooperation.

Primary Interests for the United States

➤ Keep nuclear weapon proliferation to a minimum

A North Korea armed with nuclear weapons and possessing an increasingly sophisticated program for missile construction may one day pose a direct, immediate threat to United States territory. If this occurs, North Korea can exert greater influence on US policy in Asia. Therefore, the United States has a strong incentive to successfully resolve this situation before North Korea can develop these capabilities. In addition, there are several other scenarios in which weapons or nuclear material of North Korean origin could come to harm the United States.

➤ Protect Japan and South Korea

The United States has security alliances with Japan and South Korea. North Korea maintains a large well-trained military force, but their intentions remain unclear. The assurance of US support in case of aggression helps keep stability on the peninsula for South Korea. Japan is particularly distrusted by countries within the region because of actions taken during World War II. The US commitment to Japan helps them maintain a credible security mechanism while still following Article 9 of their Constitution and the "Three Non-Nuclear Principles." The US (and China) fears the possibility of an arms race developing regionally or even world-wide in response to Japanese rearmament.

➤ Protect and promote commercial interests in Asia

Collectively, Asian countries already represent a significant portion of US foreign trade and investment. North Korea's actions are causing instability in the region which is in turn jeopardizing the investments made by individuals and businesses in the US.

➤ **Maintain national presence in East Asia**

The United States' presence in the East Asian region is a stabilizing force in many countries. Old quarrels between countries in the region constitute another important source of instability. In addition, Asia hosts both India and China, two countries that demographically are predicted to grow to superpower status in the coming decades. The United States presently has cordial relations with both countries, but these cannot be assured in the future and possessing bases of operations within the Asian region may be helpful if animosities develop. In the meantime, the US can use its influence in the region to facilitate friendlier and more meaningful relationships with these nations. North Korea's actions are placing strains on our current relations with certain countries and placing the US presence in East Asia at risk.

Primary Interests for Japan

➤ **Protection of Japanese territory**

In the event that the US was forced to mount a strike, Japan might be the most likely target for reprisals. While the North Koreans would most desire to attack the United States, their options for attacking the US mainland are extremely limited. South Korea gives massive amounts of aid to North Korea and invests heavily. While relations may not be sunny, there is considerably more warmth than in the past. Japan, however, has never had better than tepid relations with North Korea. In addition, Japan maintains a strong relationship with the US while hosting a large contingent of US military forces. Even if North Korea didn't want to attack Japan directly, the US military forces stationed there may prove a tempting target for missile or other forms of attack with spillover effects on the Japanese population.

➤ **Protect and promote commercial interests around the world**

Japan must protect its own commerce from being disrupted by mounting instability and could potentially suffer the greatest effects from it. Because many countries within Asia that Japan does a great deal of trade with still remember WWII, their actions may affect how they are perceived in these other states, requiring more tactful diplomacy if possible. Aggressive foreign policy stances are likely to be viewed by other countries with suspicion. Open and multilaterally

oriented policy stances, on the other hand, may help assuage the fears of neighbors concerning Japan's intentions.

➤ **State of US-Japanese Alliance**

Japan should be concerned with ensuring the alliance with the US stays strong. Presently, Japan relies upon the US nuclear deterrent. Japanese technology, however, is advanced enough that if they wished to produce nuclear weaponry, it would be possible within a year or less. Many Japanese would rather rely on a firm US commitment, making this an important item.

➤ **Self-sufficiency of Defense**

It would be politically untenable in Japan not to be self-sufficient in providing their own defense if need be. This means that the Japanese government has a very real stake in responding to aggressive behavior from North Korea. One anxiety that a number of Japanese harbor concerns US actions in response to a threat against US territory. If they feel that the US is not committed in these situations to help provide defense for Japan, especially nuclear deterrence, the political incentives would be to develop their own capabilities in these matters.

➤ **Abduction of Japanese citizens by North Korea**

The abduction of Japanese citizens bears little direct impact on the situation concerning North Korean nuclear ambitions, but has continually proved to be a stumbling block in pursuing more positive relations between North Korea and Japan. It recently seems to have been the reason that stalled high level talks between the two countries. If this persists, it could exacerbate tensions between the two countries and increase the likelihood of Japan becoming a target in a reprisal.

Primary Interests for China

➤ **Ensure continuation of economic modernization and social stability**

The United States leads the world in several fields, including economics, education, technology, and science. Because of this China must maintain a workable relationship with the United States to ensure its modernization initiatives are to succeed.¹⁴ Because the United States is so deeply involved in resolving this issue, China knows its role may become significant to their future relationship with the United States. As such, China's interests lay in resolving the issue on

the Korean peninsula to the United States' satisfaction. However, as China is a supporter of North Korea, including a defensive alliance, they are likely to oppose military action to the extent possible.

➤ **Ensure Stability of North Korean Regime**

- Keep US troops away from border

China fears not having a buffer defense against a direct overland route to China.

Historically, concerns about US troops being stationed near the Chinese border was part of China's reason for entering into the Korean conflict.¹⁵ While the relationship between the United States and China is more positive and stronger today, China still sees the US as a competitor and does not disregard the chance that conflict might occur in the future. China likely feels that increasing the stability in North Korea will help decrease the likelihood of the United States gaining a foothold.

- Stop flow of refugees from North Korea to northern China

The Chinese presently station a sizable military force in this area. No one is sure why, but part of the reason seems to be stopping North Koreans from illegally entering China. The Chinese have already forcibly repatriated significant numbers of North Koreans trying to cross into China. If the North Korean state were to fail, China expects that the numbers of North Koreans trying to take refuge would increase dramatically and possibly disrupt the social stability in China.

➤ **Develop and modernize North Korea**

China may see several potential benefits from this situation. China does not possess any ports on the East Sea; they are all located further south in the Yellow Sea and the East and South China Seas. Having access to a warm water port that leads into the East Sea would be helpful to China. Second, a North Korea that is friendly towards China helps to ensure China's safety from North Korea acting erratically and places China in a position of greater leverage. By being their supporter, China is in the best position to try and influence both North and South Korea to their advantage. This helps ensure China that the United States could not come to exercise undue influence in a unified Korean state.

➤ **Keep Japan from rearming/developing nuclear weapon capability**

The question of Japan rearming poses an important strategic question to China. If Japan, with the world's second largest economy, rearms, they would be China's main regional rival. The proximity of Japan to China would pose great concern when considered in conjunction with the size of Japan's military potential. The domestic tendency to mistrust Japanese would limit Chinese governmental options and may also force China to take actions it would rather not take in order to ensure domestic stability.

Primary Interests for South Korea

➤ **Ensure country is safe from NK**

North Korea currently fields one of the largest standing armies in the world, with about 700,000 troops (from a total of around 1 million) stationed within one hundred miles of the Demilitarized Zone.^{F 16} In addition, more recent statements made by North Korea announcing their right to make preemptive strikes against US and possibly South Korean targets marks an increase in the rhetoric used by the North Korean state.¹⁷ While casualty estimates for a potential large-scale conflict between North and South Korea vary, some estimates predict that the US and South Korea could incur upwards of 300,000 casualties in the first 90 days.¹⁸ Because of this, South Korea desperately wants to avoid such a large-scale conflict and the resulting destruction and chaos. The South Koreans insist on a peaceful resolution of these issues as it offers the greatest chance of avoiding bloodshed.

➤ **Protect and promote commercial interests**

Very much similar to Japan's concerns, South Korea has developed an advanced economy and wants to protect its interests and livelihood. Additionally, because Seoul, the largest commercial center within South Korea is well within range of hundreds of large artillery pieces, it is guaranteed to sustain horrific amounts of damage in an open conflict, hobbling the South Korean economy for decades.

➤ **Promote economic modernization of NK for eventual reunification**

A large number of South Koreans look forward to the day that they can reunify with their counterparts in North Korea, but the experience of German reunification showcased the problems of

^F The US State department figures place the total number of uniformed fighting personnel around 1.2 million.

an advanced industrialized nation merging with a technologically backward one. In response, South Korea has been attempting to open experimental joint industrial development areas in North Korea to start developing their economy prior to a hoped for eventual reunion. It is also hoped that this investment provides some level of protection from attack.

Primary Interests for Russia

➤ **Main motivations not directly linked to NK**

In this scenario, it seems implausible that Russia has any vital interests in ensuring a nuclear free Korean peninsula. Russia's interest is more directly about preventing nuclear proliferation. In addition, as more nations such as North Korea and possibly Iran pursue the development of nuclear weapons and long-range delivery systems, the more impetus it may give to the United States to develop defensive systems to counter these threats. The Russians support North Korea, but only in a lukewarm manner, saying that it cannot support any *unprovoked* attack by the United States.

➤ **Support China's policy to gain support for own issues**

China has a much greater interest in the North Korea issue than does Russia, but Russia has interests at stake in other areas. It is possible that Russia and China may pledge mutual support for one another in these areas to strengthen both of their positions. The development of energy reserves in Russia for China and support in foreign policy issues such as Russia's interest in Iran and China's interest in Taiwan are possible issues that Russia and China might be able to provide mutual support for.

Primary Interests for North Korea

➤ **Intentions are unknown**

North Korea is the most closed nation on the planet and a detailed analysis of their interests in any situation will be flawed by this limitation. A discussion of their stated interests in the development of this situation and an examination of their most pressing needs will hopefully give the best clues to what interests they have in this situation.

➤ **Ensure the United States does not invade**

Since the end of hostilities in the Korean War, North Korea has raised and supplied the large military force discussed. Their current stated intention is that of deterring the United States from invading North Korea. That's also the reason that North Korea cited in developing its own nuclear weapons, saying it requires a "nuclear deterrent force" to counter US nuclear threats. Recently, North Korea stated that it reserved the right to perform a preemptive strike to ensure its defense and was going to strengthen its war-footing as well. Whether this is North Korea's primary intention is unclear, especially in the development of nuclear weapons. Everything North Korea has developed can also be used in an offensive manner.

➤ **Develop domestic energy supply structures**

North Korea also talks about the right to peacefully develop nuclear power for civilian uses. The 1994 Agreed Framework laid out an agreement in which North Korea would submit to inspections and shut down previous graphite moderated reactors in exchange for construction of two 1,000 MWe light-water reactors. This demonstrates at least an initial interest in increasing domestic energy production.

➤ **Development of Missiles**

North Korea has made few remarks specifically concerning their development of missiles, claiming that it is mostly for peaceful space exploration. The development of rocket technology for peaceful exploration, however, can also easily be used to develop ballistic missiles capable of carrying warheads. Considering North Korea's problems with supplying itself with energy and food, the use of these in developing a space exploration program seems unlikely, but can't be ruled out. From a strategic perspective developing the capability to strike US territory could pose significant risks to the United States. Evidence points to North Korea pursuing joint development options with Iran to help speed the process. It could then be produced or sold to other countries interested in procuring long-range strategic weapons as a way to infuse the North Korean state with some cash.

➤ **Unification of Korea under Kim Jong Il (?)**

Some sources believe the North Korean regime's ambition to be unification of the Korean peninsula under the leadership of Kim Jong Il. They claim that the overarching reason for North

Korea's Anti-US policy is to weaken support for the US-South Korea alliance in South Korea. If accomplished, it would promote a situation much more favorable to Pyongyang in reaching a favorable settlement on the unification issue. Recent overtures by the North envision the creation of a low-level federal structure in which current leaders would be allowed to keep power and work towards further integration and unification. Since these issues were proposed, however, little progress seems to have been made in realizing these objectives.

The interests listed here help distill the most important issues for each of the countries involved in the negotiating process. Understanding these critical issues helps to show why countries have certain stances towards the conflict at hand. But analyzing the interests of the countries involved is only half of the situation. There remains the actual threat being posed by North Korea to their neighbors Japan and South Korea, not to mention the United States. The next section focuses on analyzing these potential threats.

Problematic Responses from North Korea

This section examines the military responses that North Korea might use to attack the US or our allies either preemptively or in response to a United States military strike. As is obvious reading through this section, North Korea has access to or has specifically developed numerous methods of attacking its enemies. For all the consternation about North Korean nuclear activities, they don't yet constitute a significant military threat to the United States or our allies. Most worrisome for Japan is North Korea's missile program and South Korea's most feared weapons are the artillery batteries aimed at Seoul. The US itself cannot yet be directly engaged, though certain asymmetric warfare threats from North Korea might exist.

Attack on Japan

Japan, as discussed previously, is not only the most likely third party target of a North Korean attack, but also the country that the United States is most concerned about this for. Too many problems could be created in the region if Japan were to be attacked. To make matters worse, North Korea has several options to attack Japan with if they wish.

Missiles

North Korea possesses several ballistic missile variants that have the capability of reaching Japan. The No'dong (also known as Ro'dong) ballistic missiles have the ability to strike most US bases and some of the major cities in the Japanese island chain. They have a moderate sized payload, approximately 1,000 kg depending on their configuration. North Korea's **TD-1 (Taep'o Dong-1)** missile has the ability to strike anywhere within Japanese territory and measurably beyond, carrying a payload of approximately 750 kg, again depending on configuration.¹⁹ [Please see Appendix B]

These missiles are liquid fueled and launched from mobile platforms.²⁰ Less accurate than their solid fueled counterparts these generally represent a negligible military threat except as weapons to terrorize a population.²¹ Fixed launcher platforms, such as some TD-1s, take more than a day to fuel and prepare before launch is possible. Other, shorter range missiles, such as the No-dong missiles generally take less time to fuel before launch, preventing as much advance warning. In addition, most of these missiles are mobile and can be very difficult to find or catch in the act of

fueling. While these missiles are not terribly advanced or tactically significant, if armed with certain types of WMD, they pose a considerable threat to Japan.

North Korea claims to have produced warheads for their missiles capable of delivering biological, chemical, and nuclear payloads in addition to common **HE** (*High Explosive*) warheads. It is likely that North Korea has produced warheads capable of delivering chemical and possibly also biological weapons.²² Producing nuclear warheads that are light enough and durable enough to be carried on a missile are more technically difficult and North Korea has not tested any such warheads or demonstrated the requisite level of technology. If North Korea is threatened, however, they may try to launch a missile with a warhead anyway. The reliability of such a weapon would not be very high, but still represents a threat.

Asymmetric Warfare Options

North Korea also possesses several means of attacking Japan that would be categorized as asymmetric threats. These generally represent threats that are not immediate and in some cases, may be extremely hard to trace back to North Korea.

One possible action that the North Koreas could take is to *smuggle types of WMD into Japan*. Actions such as this could cause massive casualties and chaos in Japan, reducing popular political support for helping America or be used to hold Japan hostage, trying to force them to keep the United States from using bases in their territory. Japan's ports systems, as an island, represent their economic lifeblood. Even the threat of something being smuggled in could cause great distress and a small disaster for Japan. Japanese ports generally have better safeguards than American ports, but remain vulnerable to this particular action.

Another possible action is North Korea *funding or supplying various terrorist groups within Japan*. This action would be much harder to control as the groups actually committing the actions would not be North Korean agents and as such would likely be unsuitable for trying to hold Japan hostage. The chaos an attack generated, however, might take focus off of North Korea to deal with the crisis. This method of attack offers one substantial advantage in that it may take a significant amount of time, if ever, for Japan to discover the source supplying these groups. Japan has several groups considered terrorists including the Japanese Red Army (Sekigun), the Chukaku-ha, and the Aum Supreme Truth (Aum Shinrikyo)²³; the last of which gained notoriety by carrying

out the Sarin attacks in the Japanese subway in 1995.²⁴ Also, extremist Islamic groups may wish to attack Japan for their role in Iraqi reconstruction.

The last form of asymmetric warfare could be the *use of special operations personnel to attack infrastructure*. These attacks could come with virtually no warning, targeting specific infrastructure that could impair Japan's abilities in many ways, including supporting US actions. Destroying major power transformers or urban sewage projects could cause annoyance, require expensive repair operations, or even make certain areas uninhabitable until the damage was repaired. North Korea possesses extensive special operations forces trained to undertake such operations. They are deliverable by submarine and could possibly be snuck into Japan.

Attack on South Korea

North Korea has the largest variety of options available to attack South Korea. They have been preparing for more than fifty years for attacking or being attacked from South Korea. The consequences of this outcome would be devastating to South Korea, causing billions of dollars in property loss and damage and possibly millions of casualties.

Artillery

The largest problem that North Korea presents to South Korea is the artillery emplacements that look down onto Seoul, South Korea's capital and largest city. With ten million people living within the city radius, it represents almost one quarter of the total population of South Korea and its major economic center.

Estimates made in 1999 and 2000 of North Korea's artillery inventory place the total number above 8,000 separate pieces. Of these, over five-hundred 170mm Koksan guns and over two-hundred multiple-launch rocket systems are within range of Seoul.²⁵ Some estimates believe that North Korea could sustain a barrage of 500,000 shells per hour onto Seoul for several hours without abating.²⁶ In addition, it is believed from defectors testimony that North Korea keeps large numbers of shells filled with chemical weapons.²⁷ Whether these are incorporated in their standard stockpile is unclear. The results of an attack would be disastrous with potentially millions of casualties in Seoul alone. Even with several hours warning, the actual act of evacuating Seoul would be extremely difficult if not impossible in that time frame.

Missiles

Similar to the case with Japan, North Korea has several missile types designed to strike within South Korea. The most likely threats come from their inventory of Scud and Hwasong missiles. Each of these missiles can carry between 500 and 1,000 kg and strike targets within most or all of South Korea.²⁸ The new solid fuel missiles that North Korea recently tested may be cause for worry too. General Bell, commander of US forces in Korea, commented, these new missiles represent a “quantum leap forward” in missile technology for the North Koreans, allowing them to produce missiles that are much more accurate and reliable than the older liquid fueled missiles in their possession.²⁹ These new missiles are not of sufficient range or payload to pose a significant threat, but their technical progress may make this possible soon.

Their stockpile of about six hundred missiles guarantees them a method of attacking deep into South Korea. Targeting American or South Korean outposts or joint command structures in the rear of South Korea may help lower the morale of soldiers and the ability of commanders to effectively lead them. Generally too inaccurate to pose a tactical threat, the effect could be exaggerated if armed with WMD warheads. Additionally, in targeting rear areas of South Korea, the effects of biological and or chemical warheads would not spillover to affect their own troops or population, a possible problem if they are used close to the front line.

Other Military Threats

Besides missiles and artillery, North Korea also possesses one of the world’s largest militaries. Possessing all three standard branches, investment in North Korea’s military is strongly biased towards their army.

The army is relatively well equipped, though much of it is older equipment. North Korea’s military is estimated to possess approximately 3,800 tanks total, about 2,200 of them within one-hundred miles of the **DMZ** (*Demilitarized Zone*). About 800 of these are T-62MV or newer model, fairly capable tanks that can pose a challenge to US and South Korean armor. Another 2,800 of these are a mixture of T-54/55/57 tanks.^{G 30} While outdated, updated versions of these tanks are still formidable enough to pose a problem in the rough terrain of the Korean peninsula. The rest of North Korea’s tanks are a mixture of even older, completely obsolescent tanks. They also have over 2,500 **APCs** (*Armored Personnel Carriers*) that are mostly a mixture of older Soviet and

^G These versions of tanks were designed in the late 1940s and produced up through the early 1980s. Some countries have performed significant modifications programs that have increased the useful life of these tanks.

Chinese designs with a few indigenously produced designs too.³¹ The North Korean engineering section seems to be equipped with about 600 amphibious units and over 2,300 sections of modular floating bridge pieces allowing the North Koreans substantial freedom to cross rivers if left uninterrupted. They have also acquired large numbers of **SAMs** (*Surface-to-Air Missiles*) and a large quantity of **AAA** (*Anti-Aircraft Artillery*).³² One of the most substantial difficulties that North Korea poses is the extensive tunneling program thought to have at least several undiscovered tunnels leading under the DMZ. Several that were large enough to funnel up to 30,000 troops an hour through the DMZ have been found and filled in.³³

The Air Force is relatively small and outdated. In total, the Air Force appears to have somewhere over five hundred combat planes. About one hundred planes are ground attack aircraft; mostly older models. The other four hundred plus can be classified as air-to-air fighters, but only twenty to thirty are front-line capable jets, such as **MiG** (*Mikoyan-Gurevich*)-29s. Most of the rest are MiG-23s (45 – 50), MiG-21s (120), and older fighters.³⁴ While still a threat, most US fighters will have little trouble in dealing with them, though matters may be complicated if they have to contend with SAMs and AAA as well.

The North Korean Navy is also relatively small and ineffective except in a few key areas. Trying to counter the threat of American carrier groups they have equipped about forty ships with two to four Styx anti-ship missiles each.^H Past experiences have shown limited effectiveness, but these pose the greatest threat to the US and allied navies.¹³⁵ North Korea has also developed coastal anti-ship artillery to protect their littoral region. The North Korean navy possesses about thirty – thirty-five small submarines of old design.³⁶ These don't pose a threat to the South Korean, Japanese, or American navies, but could threaten shipping and commerce or be used to insert special operations units. Finally, substantial numbers of smaller ships can be used as commerce raiders.

^H The missiles are sub-sonic and have maximum ranges between twenty-four and fifty-four nautical miles, depending on the model.

¹ In the Arab-Israeli War of 1973, 52 missiles were fired by Egyptian and Syrian ships without effect, though these missiles have been responsible for the loss of an Israeli ship in 1967. The effectiveness may have been due to external factors in this case

Asymmetric Threats

The asymmetric threats that North Korea can leverage against the South are substantial in several areas. Again proximity helps to increase the viability of these options and their potential effects.

The North Koreans would likely find little difficulty *smuggling WMD into South Korea*. Chemical and biological weapons could be carried in by ship directly to South Korea, bypassing ports and other security or through other countries that South Korea currently trades with, such as China. In addition, North Korea has created extensive tunneling systems that cross the DMZ.³⁷ Although nuclear weapons are most effective if detonated at altitude, missile options present significant difficulties for North Korean's technology and aircraft are likely to be intercepted. It may be much simpler to detonate a nuclear weapon underground in one or several of the tunnels. Similar to possible objectives in Japan, these could be used to try and force the South Koreans to give up working with America or to cause panic and chaos within the population prior to a preemptive strike.

It might also be possible to *supply terrorist groups to cause damage in South Korea*. There appear to be few domestic groups that could be incited, but several fundamentalist Islamic groups have been threatening South Korea recently for their support of the United States in Iraq. Again, this could confer the substantial benefit of relative anonymity for North Korea.

Lastly, the South Koreans are by far the most vulnerable to *North Korean Special Forces* units. These units are well-trained and specifically focus on combat in the Korean peninsula. Since they also have the ability to speak Korean, they can blend in to the local populace and become extremely hard to trace. These forces could likely penetrate into the South and attack critical infrastructure or cause other types of damage for extended periods of time.^j

Attack on American Forces in Japan and or South Korea

The North Koreans may feel constrained about attacking Japan or South Korea directly because of international pressure. US forces based within these countries, however, may represent a legitimate target to them. Certain weapons may have spillover effects that can contaminate the host, making this an important consideration for some countries.

^j By some estimates this number is over 100,000 troops.

Missiles

In most cases, missiles represent the easiest method to attack US forces in either location. The problem, however, is their inaccuracy. The Scuds and Scud variants generally have Circular Error Probabilities of between one and two km and the No Dong and TD-1 missiles of two or more km.³⁸ This means that they may often hit off the intended target into host country lands. This renders them largely ineffective militarily, unless they are equipped with biological or chemical warheads. US troops are trained and equipped to deal with biological and chemical threats, though still resulting in a reduction in speed and responsiveness. Surrounding areas, however, generally aren't prepared to deal with these contingencies and will likely suffer their effects.

Military Options

In some instances on the Korean peninsula, it may be possible for North Korea to bring their military directly to bear on American forces. Artillery may be able to engage forward bases or positions and regular army units may be able to engage US forces that are stationed along the DMZ. The navy is the other option that North Korea might have for engaging US forces directly. The opportunities, however, are relatively small for direct confrontation unless South Korea was willing to allow North Korean troops into South Korea to attack the US forces. This has been threatened if the United States initially provoked the North Koreans, but how probable this actually is, is unknown.

Asymmetric Options

Most of the methods proposed to attack Japan and South Korea with Asymmetric threats are similar to those that would be used to attack US forces stationed within these countries. Security on military bases, however, is much tighter than in the countries in general. This will be a significant deterrent to any of the above actions, but the training of North Korean Special Forces units may stand the greatest chances of carrying out attacks.

Attack on United States Territory

North Korea's options for directly attacking the United States mainland are limited. The distance separating our countries keeps us relatively protected from North Korea. The greatest danger comes from asymmetric threats.

Missiles

The recent test-firing of North Korea's new solid fuel missiles sparked controversy, but *currently, it is not believed that North Korea possesses a missile capable of striking the continental United States and won't for several years.* The TD-1 missiles that North Korea possesses don't have the range to hit anything farther than Guam or Okinawa. The TD-2 missiles that North Korea is believed to have under development would have the range to hit targets in Alaska and Hawaii, but not farther. Some US analysts believe that a three-stage version of the TD-2 would be able to strike the United States, but development is expected to take several more years after the regular TD-2 missile becomes operational.³⁹

Even if North Korea develops a missile capable of striking the United States, they haven't developed the ability to make it militarily significant. It could be equipped with a conventional HE, chemical, or possibly biological warhead causing some damage, but relatively little as safeguard can immediately be set up to decontaminate the area.⁴⁰ They have yet to show the technological ability to construct a warhead that is light enough to be mounted on a missile, a reentry vehicle, and accompanying heat shield technology to keep the device from being destroyed upon reentry. Security analysts put the development of these technologies at 2015 as the earliest possible date without substantial assistance.⁴¹ For the next several years to a decade at least, North Korea does not appear able to make a significant attack against the United States with ballistic missiles. Therefore, this threat will not be addressed further in this paper.

Asymmetric Threats

In contrast, the United States seems worryingly vulnerable to other types of attacks from North Korea. These attacks, though plausible, generally cannot be used to provide a rapid response to the United States; which may be desired by North Korea. Some threats could be pre-positioned and allow an immediate threat to the United States, but they then carry the risk of discovery by the United States in the meantime. These methods appear to be the most likely, if only possible ways to attack the United States. Their associated risks, however, may reduce North Korea's desire to use them.

North Korea could *fund or supply terrorist groups within the United States.* The United States has many groups that would want to attack us, and North Korea potentially has access to many of them through contacts. Getting these compounds into the United States would be the most

dangerous part, but still probably doesn't pose a significant risk with only about five percent of cargo being inspected at present.⁴² Once in the hands of terrorist groups, however, North Korea loses political leverage over the United States, transferring it to the terrorists. This would be an effective option if North Korea was interested purely in hurting the United States, but not for much else.

North Korea could itself *smuggle WMD in to the United States*. As discussed above, it would not be beyond the abilities of a determined person to bring such dangerous items into the United States through the port system or by other methods. Instead of waiting until they can develop ballistic missiles, this could present North Korea with a method to attack the United States with present technology. If pre-positioned in certain important targets, these could be used in a method very similar to ballistic missiles, essentially holding the United States hostage. This could be used trying to protect their nuclear and WMD programs or to keep the United States from interfering in attacks on South Korea or Japan.

It might also be possible that North Korea could *insert specially trained agents to attack infrastructure*. Most of the means that would be necessary to mount a successful attack against infrastructure targets within the United States is easily available to interested parties. Then several easy targets are also available. Taking out the sewage systems in several major US cities simultaneously could cause a great deal of disruption and probably be done with relative ease.

Proliferation Activities

Proliferation of certain nuclear technologies and or weapons has been theorized as a possible North Korean action. Not only could it be used by North Korea to threaten the United States, it may, like its missile sales, represent a source of hard currency for cash-strapped Pyongyang. There are several actions that North Korea could take that are potentially worrisome to the United States.

The North could *sell their expertise in manufacturing and constructing nuclear weapons* to various states and groups. Iran is a possible buyer of nuclear expertise, as are several financially well-off terrorist groups. This could end up drastically reducing the time necessary for these groups to develop the means to construct their own nuclear weapons.

More worrisome is the possibility of North Korea *selling weapons or certain components of them, such as fissionable material*. Again, there potentially are several groups that would be interested in purchasing weapons from North Korea. It is also possible that a weapon could be purchased for the purposes of reverse-engineering. The prospect of selling fissionable material is a

potentially lucrative one. Purchasing this material to build weapons would dramatically decrease the time required to develop nuclear weapons and would not leave the tell-tale signs of reprocessing or enrichment facilities, allowing the development to take place surreptitiously. If the group intends to construct only one or two devices, this will probably be the most cost-effective method.^K In this fashion, groups might easily gain access to rudimentary nuclear weaponry. This or other much more easily obtained material could also be used to immediately construct radiological devices which would have a significant impact, though falling short of a genuine nuclear explosion.

Miscellaneous Attacks

These options produce effects that are very hard to contain to just one target and will potentially bring in other countries that have been affected. There are numerous other possible ways in which North Korea might be able to attack the United States or other entities, but the three discussed here represent threats that could seriously impact our economies.

Commerce raiding and piracy has long been a threat. North Korea possesses several submarines and numerous small ships that could be used as commerce raiders. A single cargo ship can contain several millions of dollars in goods traveling either to or from the United States or our allies, resulting in a significant economic impact. The problem, however, is that this might cause concern in many countries, including their own allies. This makes this a riskier venture for North Korea to undertake, but a possibility.

The North Korean navy also fields ships that can ***mine South Korean and possibly Japanese harbors***. Probably built to defend their own coasts, these ships could still mine adversary harbors and bring trade coming through these routes to a standstill, something especially pertinent to Japan's economy. The actual act of accomplishing this, however, will be quite difficult because of adversary naval capabilities. Because the consequences of these acts would be serious, however, they should be planned for.

North Korea's most attractive option in this category may be ***attacking US or allied countries' telecommunications networks***. Attacks could be made by inserting series of viruses into the telecommunications system or destroying certain infrastructure components. If successful, these attacks could bring a large portion of the American economy to a standstill for several days until

^K Plutonium or HEU can both be used in the construction of nuclear devices, but plutonium requires a more complex implosion triggering device to create effective weapons. With a sufficient quantity of HEU, about 50 – 60 kg, a simple gun type device can be constructed, perhaps within the reach of some terrorist organizations.

fixes are found and distributed for the problems. With an ever-increasing amount of our communications relying on the internet and other technology this could provide a rude shock to the American economy. Again, this would have the likely effect of infecting much of the network outside of America as well, drawing international criticism.

It is certain that North Korea has worked very hard in developing many of these capabilities. They have available to them several methods to directly attack South Korea and Japan, though the United States still remains primarily outside of their technical ability. The United States and our allies must consider how to effectively counter these threats that North Korea poses. The next section will do just that, looking at policy measures the United States and our allies can implement to create a more credible military deterrent to North Korea.

Possible Countermeasures to Responses from North Korea

There are myriad different measures that the United States has available to address the problems posed by North Korea. Some of them are relatively simple to implement and others are much more complex either for economic or political reasons. To simplify their classification, they can be divided into two broad categories: 1) Measures to change the North Korean's incentive to either achieve cooperation or simply not respond to a military attack and 2) Measures to minimize the impacts of the first failing and the North Koreans attacking. While separated here for simplicity, it is useful to note that there is also a dynamic interplay at work between these two categories; measures that minimize the impact of a Korean response removes at least part of the incentive from North Korea to attack in the first place and lends credibility to the United States' commitment to carry through on such a plan. The plan with the greatest chance of success will necessarily utilize measures from both of these categories.

Measures to Change North Korean Incentives

These measures are designed to change the strategic situation such that North Korea is inclined to cooperate with the United States by disarming or simply not responding to a military strike. These include suggestions that directly address specific problematic responses from North Korea and others designed to influence countries' incentives in the situation to support the American position.

Gradualist Approach

The gradualist approach to warfare is a method that attempts to keep a conflict from escalating beyond a certain level. This approach could be used with North Korea if a military strike becomes necessary, but we are hoping to keep Japan and South Korea out of the conflict.

An announcement would be made saying that the United States was going to conduct a single military strike against selected military targets and nothing more. If North Korea allowed these to take place without responding, nothing more would happen. If they did respond, however, an escalation of hostilities would take place based on the severity of North Korean actions. This approach can easily be combined with other incentives, such as offering a method for North Korea to escape the initial strike altogether by meeting certain demands beforehand.

Due to the specific targeted military strike that is being threatened, North Korea may feel that this is not worth involving itself in a larger conflict, ignoring Japan and South Korea. In addition, North Korea's allies may pressure them to leave these other countries out of the conflict and not escalate it for a relatively low-level US action.

Announcement of Bright Line Triggers

Bright Line Triggers are specific actions which if North Korea commits will automatically result in US retaliation. Similar in concept to China's announcement of triggers that will cause them to declare war on Taiwan; the idea behind these triggers is to advertise to the world and North Korea what would warrant an American response. For instance, it could be announced that the sale of nuclear weapons or HEU to terrorist groups will result in American nuclear retaliation. The consequences of actions can be measured to be appropriate to the act committed; surgical strikes, sanctions, freezing of financial assets are also possible actions that the United States may implement.

The actions that the United States chooses will be important in convincing other countries to accept their necessity. Responding with military force only to actions that are serious enough to jeopardize American vital interests may help convince other countries that the United States is not acting unnecessarily aggressive. In particular, this might help persuade Russia that the US actions are justified as Russian officials have in the past made it clear that *unprovoked* aggression from America would be unacceptable. Some military officers hinting that Russia itself may be persuaded to take action against North Korea if certain situations arose, such as their use of nuclear weapons.⁴³ China may be harder to convince than Russia, but may agree to the necessity of certain triggers. Because contamination and a great deal of instability would be created, China will probably not accept actions threatening nuclear retaliation for less than comparable actions with WMD. China doesn't want to have to clean up these messes on its border. China also has a major interest in keeping Japan from rearming militarily and especially from developing nuclear weaponry. Announcing these potential triggers, if they help to assure US allies and forestall these developments, may help win China over. For China's other interests, compromises that would be acceptable to the US and China may be possible.

Announcement of American Singular Involvement

While America is often criticized internationally for taking unilateral actions, it might prove helpful in this case to take these actions unilaterally. By restricting involvement in strikes to the United States in as many cases as possible, North Korea will have as little reason as possible to attack either South Korea or Japan. It is likely that the South Koreans will already be trying to demonstrate that they were not involved in these actions, hoping to forestall an attack on them by the North. They would only welcome a statement by the United States saying that they were not involved. Japan might in some circumstances actually prefer to be involved in a military strike; being motivated to show that they can defend their own people and are not reliant on the United States. This could cause complications by raising tensions around the region if Japan is seen as being aggressive in pursuing this action.

Of major assistance to this effort is that both Russia and China are likely to pressure North Korea to keep a response directed towards the United States and not to interfere with South Korea or Japan. Russia, while not having vital interests at stake in this conflict, would prefer to maintain stability in the region by involving only as many countries as necessary and constraining the possibility of using WMD. China, while having similar considerations to Russia also has other reasons for trying to contain a conflict. One is China's interest in keeping Japan from rearming, a distinct possibility if attacked by North Korea. In addition, although China-North Korean trade has increased dramatically to about \$2 Billion a year in trade and investment, South Korea and Japan are a great deal more important as trading partners, logging trade and investment totals of \$43.9 Billion and \$105.3 Billion respectively in 2002.^{L 44} Protecting Japan and South Korea from North Korean aggression would seem to be important in maintaining China's rate of economic growth.

Measures to Protect South Korea

South Korea's primary concern in this conflict will be protecting their people and territory from attack by North Korea. Their own actions addressing the North may provide them some protection from Northern aggression in addition to some actions that the United States might be able to sponsor or plan.

The South Koreans have been donating large amounts of food and fertilizer as aid to North Korea to help them recover from a disastrous famine in the 90s. Since 2002, South Korea has become one of North Korea's most important sources for food aid, surpassing even China in some

^L These figures are from 2002 and trade has dropped somewhat due to heightened tensions, but the point still remains that Japan and South Korea represent significantly more important trading partners than does North Korea.

years.⁴⁵ North Korea's harvests appear to be slowly improving and reducing the urgency of food aid, but the situation still demonstrates a dependence on South Korean aid for the immediate future. Encouraging this dependence may help by discouraging Kim Jong Il from attacking. How powerful of a disincentive this represents for North Korea is unknown, but is likely to be significant. It does, however, make it much harder for the United States to attempt to pressure North Korea by imposing certain types of sanctions, possibly hurting the chances for a lower-level diplomatic solution.

South Korea's continuing dialogue with North Korea is another possible disincentive for North Korea to attack. If North Korea were contemplating a response to a military strike, considerations for future relations might deter them from attacking. One aim of North Korean diplomacy seems to be driving a wedge between South Korea and the United States, hoping to weaken our military cooperation. The North might believe that they can swing public opinion towards this with a careful response that does not endanger the South's citizens. To help convince Kim Jong Il that this consideration is important South Korea may want to televise college protests directed against US actions. These would almost certainly start spontaneously, but if they didn't, placing some staged protestors to stir up public opinion may be helpful.

Gaining Chinese and Russian Support

Several of the above measures have been calculated in part to help gain Chinese and Russian support, but other incentives might also have to be offered to gain cooperation. Gaining Chinese and Russian support for military strikes against North Korea may be difficult to accomplish, but its importance should not be underestimated. Russia does not exercise tremendous influence with North Korea, but is extremely important to security in the region. Because a great deal of the early North Korean nuclear research was conducted with Soviet assistance, they may also have useful intelligence for targeting and directing strikes against North Korea. China exercises the most influence of any country over North Korea, but one should not overestimate this. North Korea has already taken many actions that China obviously views as detrimental to their own interests and China has only been partially successful in persuading them to temper these actions. Still, they have been more effective in doing so than anyone else.

One possible method of gaining support is to offer certain incentives in return for their cooperation. For Russia, technical assistance in securing and accessing energy resources might be helpful. The same technical assistance could be of use in China. China, presently worrying about

its growing pollution problem, might also be interested in securing partnerships to reduce industrial pollutants. For instance, with vast reserves of highly polluting coal, China might accept help in constructing clean coal technology power plants. This arrangement would be beneficial to both parties. The lifting of certain export restrictions on high technology products with China might go a long way as well.

Incentives to North Korea

Finding incentives to make North Korea cooperate or to keep from responding to a strike and that the United States is willing to offer may be the most difficult aspect of this process, but also potentially the most valuable. The White House currently says it will not be blackmailed to negotiate further upon issues that it considers to have already been settled in the 1994 Agreed Framework.

This stance would allow for the resumption of the 1994 Agreed Framework terms as a potential incentive. In the context of a military strike, offering to resume the 1994 Agreed Framework incentives immediately if certain conditions are met, before or after a strike, might give the North Koreans incentive to give in before the strike or alternatively if its stockpile and or infrastructure for developing nuclear weapons are damaged, receiving these incentives may become more attractive than redeveloping the capabilities lost in the strike.

Separate from the negotiations for disarmament, the United States could offer negotiations for a nonaggression agreement. The North Koreans claim that their only motivation in developing nuclear weapons is as a deterrent against the Untied States' planning an invasion. If the United States can plausibly deny the North Koreans this, it might either help a great deal in securing a negotiated settlement or provide legitimacy to United States' actions to follow. These would not be related to the present negotiations, but the US can make certain security guarantees in a different forum and thereby possibly bypass the problem of direct renegotiation of terms mentioned above.

Measures to Minimize the Impacts of a North Korean Attack

The following are measures designed in theory to address specific threats that a North Korean counterattack poses. The greatest problem in dealing with these threats, however, is the fact that North Korean military preparations are extremely extensive - There is no amount of preparation that would keep a determined North Korean offensive from causing considerable damage. Implementing measures to deal with these preparations is prudent and can help to save many lives

should the North Koreans launch a counterattack to an American strike or launch a preemptive strike. Not seeking to formulate a detailed attack strategy, this subsection looks at policy options to directly bring about effects and policy fixes for the problems with techniques.

Dealing with the Nuclear Threat

There is no good method of dealing with the threat of a nuclear weapon, only **nuclear deterrence**. A nuclear weapon's effects are devastating and uncontrollable. It can render a large area of territory uninhabitable for hundreds or thousands of years because of contamination. The only method that we have developed to deal with an extant nuclear threat is to provide a credible counter-threat.

The conditions specified for nuclear retaliation will require a delicate balancing game with many parties involved. The United States also has a key interest in not wantonly threatening nuclear retaliation, the effects of this possibly negating any benefit gained from disarming the North Korean threat.

A judicious policy of retaliation for attacks directed against the United States will be crucial, but even more so will be the policy concerning our allies. A nuclear umbrella should be extended to Japan and South Korea and it should cover any use of nuclear and biological weapons against them. The use of chemical and conventional weapons may not warrant the threat of nuclear retaliation except in extreme cases, but this is debatable especially as circumstances may change.

Making the threat of nuclear deterrence credible will be another task, but the easiest of the three. Holding nuclear weapons in Guam or the stationing of an **SSBN** (*Ballistic Missile Submarine*) in vicinity of North Korea would work well. While the US can attack using nuclear weapons from almost anywhere, the psychological impact of this action can help demonstrate our intent. When announced, however, these actions would be considered very provocative by the North Koreans and could result in a breakdown of the diplomatic process.

Dealing with the Missile Threat

There are two basic ways of dealing with the missile threat from North Korea – destroy the missiles, or erect defenses against them. North Korea's primary threat towards Japan is missile based so Japan is concentrating on both of these abilities. Both of these strategies have problems, however.

Conducting air-strikes using precision guided munitions is the most effective method of destroying the missiles. Using modern intelligence gathering techniques, finding and tracking a substantial number of the missiles might be possible, but as most of North Korea's launchers are mobile platforms that are harder to track, it can virtually be assured that not all of the missiles will be found. One problem is that enough airpower would have to be brought to bear on the situation almost simultaneously. Otherwise, missiles not destroyed could be launched in retaliation. The other is that taking such action could easily escalate a conflict to a state of complete war. Because of this, this option is not viable unless a state of war already exists or it becomes apparent that North Korea is preparing a preemptive strike. In both cases, eliminating the missiles will become high priorities.

Deploying missile defensive systems are the other side of dealing with a missile threat. The United States Navy's Aegis system is one system developed to counter these threats. Recent upgrades have equipped the system with limited tactical ballistic missile defense capability. These upgrades, however, are unproven in combat and their effectiveness is not known. **PAC-3 (Patriot Advanced Capability 3)** missiles are the most recent advancement to the Patriot missile's ability to intercept ballistic missiles. Their effectiveness in the most recent Iraqi conflict is thought to be high, but still classified. Because of their limited range and expense, these are generally stationed in densely populated urban areas and offer little protection for rural and suburban areas. Some systems have already been installed in Japan and South Korea for defensive purposes. Their presence can be a great boon to military morale and is a visible demonstration of United States' commitment.

Taken together, these options represent the best defense against missile threats. A combination of defensive systems and surveillance for mounting timely airstrikes would help to reduce the numbers of missiles launched and then those that impacted. It is possible that this could form a relatively effective defense for Japan. ***Interoperability exercises with Japanese, South Korean, and American armed forces*** can help bring structure to the command environment by pinpointing and fixing issues that arise, thereby allowing the concentration of greater numbers of forces simultaneously for strikes. While not as effective, these could use computer simulation exercises instead of military equipment if North Korean objection to exercises becomes a concern. South Korea faces a more difficult situation. The Navy's Aegis system will probably be rendered ineffective for South Korea. The PAC-3 defenses will be less effective over such short ranges, but

can still provide a level of defense. The number of North Korean missiles, however, is such that a burst of launches could overwhelm the defenses of anything except a huge number of batteries. Strategically placed, they may provide a defensive bonus to that area, but cannot be relied upon to protect all or most of South Korea from this threat.

Dealing with the Chemical and Biological Weapons Threat

The threat imposed by these weapons is tough to counter, but substantial measures can be taken to protect from and respond to these deadly weapons. In fact, it has already begun in some quarters. All American military members undergo chemical and biological threat training and receive equipment enabling them to operate in a compromised environment, albeit with a loss of efficiency. This doesn't help civilians though, and must be supplemented by several measures to help in dealing with these threats.

One of the simplest and most cost-effective methods of dealing with these threats are ***conducting readiness drills and educating the public about the threats***. The panic that results when disasters occur often causes more damage than the disaster itself. The simple act of educating the public about the threats posed by these weapons helps to transform people's fear of the unknown into a fear that they can deal with mentally. Conducting periodic readiness drills helps people to deal with the threat physically. Reviewing measures to protect themselves before attacks and how to respond afterwards is potentially of enormous value. These measures often constituted the main line of defense against infectious disease outbreaks before the invention of modern medical techniques; the value of a well-planned and conducted campaign utilizing these measures has been proven by history.

One of the greatest helps in dealing with these threats is time. The other is knowledge. ***Developing a networked sensor system to quickly detect and identify threats*** can provide emergency and medical teams more of both. Being alerted earlier to chemical contamination can serve for quicker, more efficient evacuations and containment measures. Understanding the nature of these threats lets the workers know exactly what precautions need to be taken and what remedial action is required. Especially with infectious disease, limiting its initial spread greatly reduces the problem that has to be dealt with by authorities.

Another potentially costly, but still effective measure is ***stockpiling antibiotics and anti-viral drugs*** to combat the diseases. As North Korea's biological weapons are not thought to be very

advanced, this remains a viable option for dealing with limited numbers of people being involved in a strike. If the attacks were of a large enough scale, however, the capacity being stockpiled may not be enough to satisfy the demand generated.

Dealing with the Military Threat

The military threat North Korea presents is large, but there are several tactics that can exploit weaknesses in the North Korean state and infrastructure. Discussed here are a few responses that can drastically curtail some of North Korea's abilities, though certainly not an exhaustive list. The policy implementation comes in ***ensuring that these capabilities are present and well-advertised***. This may help provide a significant deterrent to North Korea if they know that these few actions are credible and present.

To effectively defeat an Air Force, you don't need to destroy any of its planes, just keep them from being able to take off. *Destroying North Korea's runways* effectively grounds their entire inventory of planes except for helicopters and other Vertical Takeoff and Landing capable planes. This not only eliminates the threat, but does so quickly and efficiently, allowing allied air assets to concentrate on other important jobs. This can easily be accomplished by stealth fighters and or bombers with precision guided munitions.

The North Korean Navy can also be dealt with quickly. *American naval airpower or attack submarines* can neutralize most of the threat from the North Korean Navy. Their navy can be engaged with AGM-84 Harpoon/SLAM anti-ship missiles from a range of 60 nm or 150+ nm with the improved SLAM-ER version, eliminating the greatest threat to allied navies from beyond their capability to attack us.⁴⁶ Attack submarines could also be used quite effectively to engage the enemy fleet. One specific target for them would be the North Korean mining ships. This would prevent them from interfering with South Korean or Japanese ports or from mining their own coast as a defense against American naval power.

The North Korean economy is weak and their logistical support accordingly deprived. If the *United States can destroy the logistical support the North Koreans employ*, such as fuel tanks, fuel trucks, supplies, and ammunition, the North Korean advance can be slowed dramatically. Tanks that have no fuel can't fight and neither can soldiers without ammunition. It will take some time for these logistical issues to come into play, but can be quite dramatic.

Developing a PsyOps (Psychological Operations) campaign to wage against North Korea will be an important objective. Finding ways of demoralizing their troops and citizens will be hard; much is made of North Korea's political indoctrination, but influencing this constituency may prove to be an effective method of waging a campaign. North Korean defections to the south have been increasing as of late. Only about 7,700 defections have taken place since the end of the Korean War, but more than 5,700 of them have taken place since 2002.⁴⁷ This might indicate an opening for a PsyOps campaign.

Dealing with the Asymmetric Warfare Threat

Dealing with these threats is very similar to dealing with terrorism. With the exception of Special Forces operations, many of the targets, methods of attack, and infiltration techniques are similar to what we already believe we might encounter from terrorists. Therefore, dealing with this threat should essentially take the form of countering terrorist threats to our country. Efforts that countries are already making towards this end will help protect them from this event, but there is at least one possibility that may enhance the American position.

The *upgrading of security screening technology at American ports and borders* will be helpful against any threat trying to enter our country. Very significantly, it might enable a freer flow of goods into and out of our country in times of crisis. The technology is being developed that can screen for traces of WMD. This added security will complicate matters for North Korea if they try to smuggle WMD into the United States. The biggest difficulty and probable stumbling block in this plan is convincing Congress to allocate enough scarce resources to help upgrade facilities.

Passing guidelines on pre-screening security measures may also encourage foreign countries and or businesses to help upgrade the infrastructure. By setting guidelines the government could give our ports and or foreign ports a method to bypass security inspections in the United States while still maintaining their integrity. This would help safely speed processing in the United States in times of crisis when we are expecting increased threats.

Dealing with the Artillery Threat

This is the greatest threat for South Korea, and minimizing it is of the utmost importance. There are two primary methods of dealing with this threat: 1) Destroying it before it starts pummeling South Korea or 2) Destroying it after it starts pummeling South Korea.

Similar to dealing with the missiles, destroying the artillery will require conducting *Air-strikes using precision-guided munitions*. These strikes will run into the same problems. Again, *joint surveillance of targets and intelligence sharing* combined with *joint training exercises* will help pinpoint as many targets as possible and increase efficiency in attacking. Most of the largest guns are hidden in mountainsides and hardened shelters to protect them and these are the important ones to try and destroy with airstrikes. The United States can also choose to *procure and station more radar-tracking artillery in South Korea*. These units can track incoming artillery shells trajectory and use computer algorithms to back-plot the position of the artillery originally firing the shots and then engage them directly. Perhaps the greatest value in these weapons comes from boosting the morale of soldiers and demonstrating the US commitment.

Dealing with Proliferation Activities

Dealing with the potential threat of North Korea participating in WMD proliferation activities will be hard because of the multiple outlets from the country. The best option the United States has in this situation may again be to use *nuclear deterrence measures*.

Using nuclear deterrence in this case may run into problems, but is better than nothing. The use of nuclear deterrence against this threat could be reasonable considering the severity of the problem it presents to the United States and allied countries. The main problem with using this technique, though, is that you have to make it credible that you can catch them doing it. With so many potential customers and methods that this could be accomplished through, it is impossible to keep track of them all. Techniques have been developed, though, that can trace the origin of nuclear material. This helps give a credible chance of identifying North Korea when its found.

Countries can inspect all cargo coming into their territory. For the efforts on the buyer's end to come to fruition, the weapon has to be transported into the target country's territory or be acquired there. The upgrades on security screening procedures will help, but the *temporary hiring of more screening personnel* may also. These personnel don't have to be as highly trained or as highly paid as normal screening personnel, but can help increase the amount of cargo being screened from its present level of about five percent. This increases our security from other actors that might try to smuggle WMD into the country in addition to North Korea and gives more credibility to the nuclear deterrence option discussed above by catching more of it.

Information Warfare Threat

The possibility of tampering with the telecommunications network in America, Japan, and South Korea presents a tempting and financially relevant target. All computers are vulnerable to some extent to viruses and hackers if they are connected to the internet. The best method, if possible, would be to *develop a way to shut off all access to the internet in North Korea*. By doing so, it becomes impossible to spread the viruses except from other countries, greatly slowing or stopping the process of implementing these attacks.

These possible measures, however, must all be implemented to be effective. Because of several considerations that have probably become apparent throughout this section, it is necessary to build a prudent plan concerning how to implement these measures. The next section on recommendations tries to sketch a broad outline of how that might be done and quickly addresses some of the major problems associated with implementation.

Recommendations

Ensuring the viability of diplomatic solutions while simultaneously building a more credible military option is hard and some tradeoffs will have to be made. Most evident in the measures presented in the previous section is that implementation of some measures would provoke the North Koreans, making a diplomatic solution much more difficult to achieve.

To present the recommendations it becomes necessary to account for this feature. Therefore, the recommendations have been divided into two groups: 1) Measures that can be implemented immediately that will help moderate the effects of performing a strike if it eventually becomes necessary and 2) Measures that can be implemented or announced before the time of an attack to create a situation where the use of military force would be less costly than otherwise and reduce the incentive for NK to attack. This taxonomy has one qualifier – the role that transparency should play in implementation.

Transparency

Transparency in international relations is considered by many to be the best way to prevent conflict in the international arena, but the particular circumstances in North Korea may present an exception to the rule. Defined by Ann Florini, previous director for the Carnegie Endowment's Project on Transparency, it is quite simply the ““opposite of secrecy.””⁴⁸ In the context of this discussion we will operationally define it as fully and truthfully disclosing the implementation of our measures.

Transparency usually works well to moderate a situation when all parties subscribe to it, but North Korea has failed in this regard. The international community cannot be sure whether Kim Jong Il wants to use his nuclear program as a bargaining chip, a deterrent force against the United States, or a weapon to force the reunification of Korea. Because of this it is necessary to ensure South Korea is well protected in case Kim's intention is to attack or commit some other act that cannot be tolerated. At the same time, it would be foolish to degrade the chances of a peaceful diplomatic solution by our actions. Given this situation, implementation of some measures or preparation for them may better be conducted in secret and only announced when diplomacy has obviously failed, preserving the integrity of the diplomacy as much as possible. This helps accomplish both of our objectives.

Measures that can be implemented immediately

➤ Announcement of Bright Line Triggers

One of the issues that making an announcement of this sort entails is coordination among groups that have an interest in the situation. If we announced this policy without trying to coordinate among groups there could be unexpected actions and misunderstandings about intentions. Because of the content of the announcement and the fact that we want to ensure no other groups are involved in a strike if possible, it might be best to conduct informal meetings. The **TCOG** (*Trilateral Coordination and Oversight Group*) meetings as they are running currently offer both a structure and the environment that would best suit these meetings. In addition, it has been pointed out that a trilateral structure might offer a way to involve other regional actors, Russia and China in this case, into the decision-making process. This not only will help ensure they feel their interests are heard and seriously considered, but offers the chance that they might be able to contribute resources to an engagement initiative.⁴⁹

➤ Stationing a nuclear deterrent

The one advantage of stationing a nuclear deterrent closer to the conflict is that the response time if it is to be used is quicker. There is no telling when a crisis might erupt in the area and in some circumstances a quicker response could change how much of an initial conflict unfolded. This is an option, however, that should be surreptitiously implemented. Announcement of this action too early could greatly jeopardize the chances for a diplomatic resolution.

- Evacuation planning, readiness drills and public education campaigns
- Build chemical and biological detector network for key locations
- Build small stockpile of medical treatment supplies

The main problem that might be encountered in this option is in finding funding for these activities. The most useful part of these activities, however, is that they can help prepare a society for many types of medical emergencies – dealing with an Avian Flu pandemic for example. Combining several issues into one education campaign can help save costs. Evacuation planning and readiness drills are helpful in many emergency situations, not just medical ones. By working

with groups interested in the other facets and stressing the multiple issues these all address, a substantial lobbying base can be formed, helping to secure the funding.

The detector network would be too expensive to set up and maintain if too large of an area is targeted, but security could be increased by focusing on a few key sites. Detectors should be placed at sites such as airports, major train and subway stations, and hospitals, all places where infection can begin to spread rapidly. Advanced warning of contamination in these areas can help stop the spread to other areas of a country, possibly enabling a quarantine measure to take effect before the situation overwhelms a country's defenses.

These measures can hopefully create synergistic effects together, raising the effectiveness of all of them.

➤ Pre-positioning and advertisement of military capabilities

The major expense of purchasing these systems has already been accomplished; all that remains is the actual stationing of the capabilities if they are not there already. Advertising of the capabilities should be taken with care or perhaps postponed until before the attacks are about to happen as they may be misconstrued as aggressive behavior and impact upon diplomacy.

➤ Cargo screening systems upgrades

➤ Passing security guidelines

The hardest part of implementing these measures again is in cost. Complete protection would be best, but prohibitively expensive. Less than that is needed to have an effective deterrent effect, however, and smart planning about inspections can increase the effectiveness further by targeting cargo particularly vulnerable to smuggling operations. Both measures are starting to take place in the United States, but more is likely needed for an effective deterrent.

Passing the guidelines helps create a cooperative inspection system. By allowing for a method to safely screen cargos through US customs, this might help create an effective incentive for other countries to begin investing in the extra security mentioned above. For instance, Wal-mart may be interested in investing to ensure it can get its products through in a crisis, a potentially significant incentive if no one else can.

➤ Start developing PsyOps Campaigns

The United States has traditionally had problems planning PsyOps campaigns. They often take a great deal of knowledge about the culture to be effective at communicating something effectively. Looking for and examining possible tactics and refining the message can be done ahead of time in this case as we know the target and have access to South Korea which has the same historical cultural base. The question of whether or not to begin prosecution of the campaign until conflict erupts is difficult. The longer that the campaign runs, the more effective it is likely to be, but also of effecting diplomatic engagement.

- Conducting joint training exercises
- Set up joint surveillance and intelligence sharing structures

The United States agencies have always had trouble in sharing intelligence. The process of screening foreigners to receive classified information has always taken a long time and been a problem. Streamlining these procedures could go a long way towards easing the burdens of sharing intelligence and lead to better target surveillance capabilities.

Conducting joint training exercises both in intelligence operations and military operations will help increase efficiency all around and prepare participants to work together in incidents. One problem with these exercises, however, has been Pyongyang's rhetoric about them. If this starts causing problems, they could be conducted using computers. These would not be as effective as with actual hardware, but also potentially of less concern to North Korea.

- Deploying defensive systems (PAC-3 missiles and radar-tracking artillery)

This is an option that does a lot to prove the United States' commitment to our allies, but costs a lot of money. The US already positions quite a bit of defensive equipment in the countries so what more is added may make little tactical difference. This measure should be adopted if the United States needs to show commitment, otherwise it might be dispensed with.

- Develop internet access denial capability

Developing this capability, if possible, would go a long way to stopping possible information warfare attacks from North Korea in times of crisis. It also has the possibility to be used as a form of economic sanctions against a country.

Measures to be Implemented or Announced at time of Attack

➤ Implementation of a gradualist approach to attacking North Korea

This is perhaps the most important single policy measure that the United States can implement to help limit the scale of a conflict with North Korea. Restraining the use of means may help keep Kim Jong Il from fearing this action and escalating the conflict.

➤ Announcement of American singular involvement

One potential problem could arise if North Korea attacks Japan. Japan would likely insist in this case participating in retaliatory raids to demonstrate to Japanese citizens that they can provide protection. In this case, the United States should agree, otherwise Japan is likely to carry out the attacks themselves anyway and the US be left without any input. In as many cases as possible, however, any action should be limited to the United States.

➤ If possible announce alternative to US actions and incentives

This is an ultimatum that can be made to the North Koreans to accept a settlement before hostilities begin or before they escalate to a higher level. Combining this with a promise to provide incentives, such as resuming commitments to the 1994 Agreed Framework, might work to help avert a disaster. If it did not, generosity on the part of the United States in terms of incentives might help convince the world of the legitimacy of the action based on Pyongyang's continued intransigence.

➤ Announcement of American nuclear deterrent

The announcement of this must be handled with care, but is necessary. A nuclear deterrent needs to be known to all involved to work, otherwise it is only good as a weapon.

➤ Hire more temporary workers for security at border crossings

Because of the expense involved with this option, it will probably have to wait until the fear of incidents is more pronounced. Mobilization of National Guard resources may be one option in an emergency as well. In the present conflicts in Iraq and Afghanistan only the manpower in certain fields is being utilized. The people that have largely remained unaffected in call-ups would be available and might present the best option.

➤ Incentives deals to Russia and China

Getting incentives to help gain these countries' cooperation will be hard to pass through Congress, but specific targeting might be helpful. The pollution reduction incentive mentioned previously above might appeal to many environmentalists and democrats in the Congress.

- Commence PsyOps Campaigns if not already in operation (Self-explanatory)
- Advertisement of military capabilities including defensive weaponry if not done already (Self-explanatory)

The measures taken together represent a compromise between arming Japan and South Korea with the best defense possible and still allowing for a negotiated settlement. There are probably more measures that can be implemented to help along similar lines, but these represent a good start for securing the defense of the United States and our allies.

Conclusion

North Korea presents too much of a potential threat to Japan and South Korea to ignore. To do so would be neglecting our allies in the region and allowing a threat to the stability of the region, if not the world, to continue on a course for conflict. Diplomatic engagement offers the best hope of safely and satisfactorily resolving the situation, but the intentions Kim Jong Il has towards these countries and America are unknown and cannot be counted upon to be peaceful. Preparing to defend these countries and ourselves against aggression is an extremely important objective, yet it must be done with careful consideration towards preserving the diplomatic engagement of the six-party talks.

The current situation has roots in the history of North Korea's WMD program. They have been working since the 1960s to develop the ability to indigenously produce WMD. Lately, their nuclear program has been receiving the greatest amount of international attention and it is likely that North Korea has developed a nuclear weapon, though it has not yet been confirmed. Still, their technical ability limits the strategic effectiveness of this weapon. North Korea's chemical and biological weapons programs are both able to produce weapons that can cause great panic if not casualties and be delivered by a wide variety of their weapons systems.

The main interests of all the major countries involved will have to be considered in formulating a plan. The United States interests range from protecting its allies and interests in Asia to keeping proliferation to a minimum. South Korea and Japan are both concerned about protecting their citizens and territory, though different circumstances are leading them to pursue different defensive strategies. Russia and China both want to help protect North Korea from unprovoked American aggression, but both also have other significant interests in the conflict. China especially wants to keep Japan from rearming or developing nuclear weaponry. North Korea itself offers the hardest country to analyze its interests. Their actions could plausibly be used for either defensive deterrent against American aggression or a method to deter America from helping allies in the region.

North Korea has access to or has developed several methods of attacking their neighbors and causing problems for America. Their missiles, though unable to attack the United States, are capable of causing significant damage to Japan and South Korea. In addition, their artillery poised to attack Seoul and military capabilities increase the threat to South Korea. They also likely have

the ability to form relationships with a number of terrorist organizations that could attack the US, Japan, or South Korea. North Korea could give WMD to these organizations or infiltrate the countries themselves to use it. In addition, the potential that North Korea has to proliferate nuclear technology makes them a very serious potential threat to the entire world's security. Other potential problems include information warfare and various forms of commerce raiding and infrastructure attacks.

The United States has many measures available that can help contain the threat that North Korea poses. One type of measure the United States has is to change the strategic situation that North Korea faces, attempting to gain cooperation or a non-responsive stance towards military strikes. The other type of measure available to the United States is to directly work to moderate the military and other advantages of the North Korean regime. Combined, these measures may be able to convince Kim Jong Il that his best interests lie in disarming and joining in to the international community.

The implementation of the measures discussed, however, must consider how to best preserve the viability of the diplomatic process. Therefore, the actual implementation or announcement of these measures should be taken carefully. Some of the measures can and should be implemented as soon as feasible. These measures, such as the preparation of the medical system, help to prepare a community to deal with the consequences of possible aggression. Other measures will likely be construed as aggressive by North Korea, possibly resulting in a breakdown of negotiations. These options, such as the announcement of an American SSBN stationed off the coast of North Korea, should be brought up only when necessary and as a last resort.

This plan represents a compromise between defending Japan and South Korea against North Korean aggression and pursuing a diplomatic solution. These recommendations can help to improve the military situation for the United States and its allies while still maintaining the option for peaceful settlement. Nothing, however, can create a situation where North Korean actions can definitely be contained or our allies completely defended against North Korean military capability. For these reasons, let us all hope that a peaceful resolution of these issues will result.

¹ Federation of American Scientists, “Nuclear Weapons Program – North Korea” 9 June 2003. accessed on (3 Jan 2006) at <<http://www.fas.org/nuke/guide/dprk/nuke/index.html>>.

² Bureau of East Asian and Pacific Affairs, “North Korea – November 2005” United States Department of State. Accessed on (31 Mar 2006) at <<http://www.state.gov/r/pa/ei/bgn/2792.htm>

³ Federation of American Scientists, “Nuclear Weapons Program – North Korea”

⁴ Ibid.

⁵ Ibid.

⁶ Frederic L. Kirgis, “North Korea’s Withdrawal from the Nuclear Nonproliferation treaty” American Society of International Law, January 2003. accessed on (2 Mar 2006) at <<http://www.asil.org/insights/insigh96.htm>>.

⁷ United Nations Security Council. “Resolution 825” 11 May 1993.

⁸ CIA World Factbook

⁹ Wikipedia, “Six-Party Talks” 27 Mar 2006. accessed on (2 Apr 2006) at <http://en.wikipedia.org/wiki/Six-party_talks>.

¹⁰ Federation of American Scientists, “Biological Weapons Program – North Korea” accessed on (4 Mar 2006) at <<http://www.fas.org/nuke/guide/dprk/bw/index.html>>.

¹¹ Ibid.

¹² Federation of American Scientists, “Chemical Weapons Program – North Korea” accessed on (4 Mar 2006) at <<http://www.fas.org/nuke/guide/dprk/cw/index.html>>.

¹³ Ibid.

¹⁴ Wang Jisi, “China’s Search for Stability With America,” *Foreign Affairs* September/October 2005. accessed on (5 Dec 2005) at <www.foreignaffairs.org>.

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²¹ Ibid.

²² Jon Herskovitz, “N.Korea upgrades mobile missile arsenal –report,” Reuters. 22 Mar 2006. accessed on (25 March 2006) at <http://today.reuters.co.uk/news/newsArticle.aspx?type=worldNews&storyID=2006-03-22T074519Z_01_SEO105585_RTRUKOC_0_UK-KOREA-NORTH-MISSILES.xml&archived=False>.

²³ Wikipedia, “List of Terrorist Organizations,” Wikipedia Free Encyclopedia. 26 Mar 2006. accessed on (26 Mar 2006) at <http://en.wikipedia.org/wiki/List_of_terrorist_groups>.

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²⁵ Philip C. Saunders, “Military Options for Dealing with North Korea’s Nuclear Program”

²⁶ Ibid.

²⁷ Monterrey Institute of International Studies, “North Korea Profile: Chemical Overview,” Nuclear Threat Initiative. Feb 2006. accessed on (26 Mar 2006) at <http://www.nti.org/e_research/profiles/NK/Chemical/index.html>.

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²⁹ Jack Kim, “N. Korea Missiles Tested Are Quantum Leap: U.S. General” DefenseNews.com. 10 Mar 2006. accessed on (10 Mar 2006) at <<http://www.defensenews.com/story.php?F=1589997&C=airwar>>.

³⁰ Global Security, “Korean People’s Army – Introduction”

³¹ Ibid.

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³³ Global Security Analysts, “DMZ-APRK Tunnels” GlobalSecurity.org. 27 Apr 2005. accessed on (26 Mar 2006) at <<http://www.globalsecurity.org/military/world/dprk/kpa-tunnels.htm>>.

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³⁹ East Asia Nonproliferation Program, “CNS Special Report on North Korean Ballistic Missile Capabilities”

⁴⁰ CNS Special Report on North Korean Ballistic Missile Capabilities, p 1

⁴¹ Ibid., p 2

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Appendix A

Brief History of the North Korean Nuclear Program and Details of the 1994 Agreed Framework

The North Korean nuclear weapons program is believed to date as far back as the 1980s, but they have had experience in nuclear energy generation from before that. The North Koreans first established a large-scale atomic energy research facility in Yongbyon in the 1960s and sent students to the Soviet Union during the same period to be trained.¹ Under the cooperation agreement reached with the Soviets, it was agreed that construction of a nuclear research center in Yongbyon would be undertaken, which was completed in 1965. An indigenously produced five MWe (*Megawatt electric*) reactor began in the 1970s was completed in 1986 demonstrated increasing technical abilities.² In the 1980s focus shifted to practical applications for nuclear power and weapons development. To further their new research aims, construction on a 200 MWe reactor in Taechon and reprocessing facilities in Yongbyon began.³ The North Koreans also conducted high-explosive detonation tests.⁴

⁵

The North Korean regime was forced to sign onto the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) in 1985. In signing on, however, the regime still refused to sign a nuclear safeguards agreement, a requirement under the NPT. It wasn't until January of 1992 that North Korea signed a nuclear safeguards agreement as part of an effort headed by South Korea, and allowed inspections to begin in June 1992.

In spring 1994, North Korea unloaded a quantity of fuel from its experimental five MWe reactor. The United States pushed for UN sanctions in return, resulting in a dramatic increase in tensions on the peninsula. A visit by former President Carter was able to curb the tensions and talks resumed in July only to be cut short by the death of Kim Il Sung, then President of North Korea. After another period of increased tensions the talks were resumed and resulted in the Agreed Framework, signed into effect on 12 October 1994.

The Agreed Framework carried several stipulations for North Korea. It would have to freeze and dismantle its graphite moderated reactors, including two reactors then under construction.⁶ They also had to confirm their status as NPT signatories and come into compliance with a nuclear safeguards agreement at a later

¹ Federation of American Scientists "Nuclear Weapons Program – North Korea"

² Robert S. Norris, Hans M. Kristensen, and Joshua Handler. "North Korea's nuclear program, 2003" *Bulletin of the Atomic Scientists*. Vol. 59 No. 2, p. 75.

³ Federation of American Scientists "Nuclear Weapons Program – North Korea"

⁴ Ibid.

⁵ High-explosive implosion type detonators are commonly used in nuclear weapons to begin the nuclear chain reaction.

⁶ US Dept of State Fact Sheet

date. In return, North Korea secured the promise for supplies of heavy oil to meet energy deficits until two LWRs (*Light Water Reactors*) could be constructed.⁷

In accordance with North Korea beginning to carry out the actions required for them through the Agreed Framework, the United States started to partially lift economic sanctions. Despite problems occurring near the initial implementation of the Agreed Framework, it appeared that it was working well for a period of time. The agreement was initially obstructed due to the North Korean's refusal to accept the South Korean design for the LWRs. This was settled after meetings with the US, South Korea and North Korea. This then appeared to be working well until September 2002.

⁷ Each of these reactors would produce 1,000 MW. LWRs were preferred because they produce a great deal less plutonium in normal operation than do other types of reactors, hence making them more proliferation resistant.

Appendix B

North Korean Missile Capability and Inventory

Missile Variant	Fuel	Range (km)	Payload (kg)	Inventory (approx)	Comments
KN-02	Solid	100 – 120‡	250‡	?	In testing phase
Scud-B	Liquid	300*	985*	° see note	
Hwasong-5	Liquid	300*	985*	° see note	Scud-B derivative
Hwasong-6	Liquid	500‡	770‡	° see note	Scud-C derivative
Scud-D	Liquid	700‡	500‡	° see note	
No-dong	Liquid	1,000 – 1,500	760 – 1,158†	200	Also fielded by Iran and Pakistan
Taep'o dong-X	Liquid	2,500 – 4,000‡	750?	?	Indigenously developed, similar to Soviet SS-4.
Taep'o dong-1; two stage (Paektusan-1)	Liquid	2,200 (calculated)		?	Thought to be fielded by Iran as Shahab-4
Taep'o dong-2	Liquid	5,000 – 6,000?		?	None of these are thought to be currently active, but still in design stage. Thought to be basis of Iran's Shahab-5.

† - Tradeoff ratios between range and payload are not specified, but the minimum end of one measure is associated with the maximum of the other measure. For instance, The No-dong can travel 2,000 km carrying 1,000 kg of payload or 2,200 km carrying 750 kg.

° - Total believed to be about 600 distributed among these types but distribution unknown

* Source for these numbers came from Middle East Intelligence Bulletin website.

‡ Source for these numbers came from CNS “CNS Special Report on North Korean Ballistic Missile Capabilities”

Source for rest of information from Federation of American Scientists “Missiles”

Appendix C

Ballistic Missile Range Objectives from North Korea

<i>Target</i>	<i>Range Required</i>
The entire ROK	500 km
US bases in Japan and major Japanese cities	1,000-1,500 km
US bases in East Asia	1,500-2,500 km
US bases in Alaska and Pacific Ocean	4,000-6,000 km
Continental US	6,000+ km

Source – Joseph S. Bermudez, *Occasional No. 2, p. 16*

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